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A STUDY OF FAILURES

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At the end of the first quarter of the school year, 1920–21, the number of failures in our high school was unusually large—so large that the problem of reducing it was taken up at once. Temporary relief was provided, and this was followed by a study of the possible causes of failure.

Our first effort was to determine what effect, if any, the size of the class had on the number of failures. The average percentage of failures at the end of the first semester was 11.4; at the end of the second, 9.1. The average number of students in each class during the first semester was twenty-three; during the second semester, twenty-four. With the majority of teachers, the percentage of failures was less the second semester than the first. Twelve teachers had a larger percentage of failures the second semester than the first. Of this number, six had smaller classes the second semester, two had classes the same size, and four had classes averaging one pupil larger. It was evident from the data collected that the size of the classes had little effect on the number of failures.

TABLE I

PERCENTAGE OF FAILURES IN THE DIFFERENT GRADES

Year	First Semester	Second Semester
Freshman	12.4	10.8
Sophomore	14.3	12.1
Junior	12.0	7.0
Senior	5.5	5.5

The data were further analyzed with a view to determining the percentage of failures by grades and by subjects. The averages are shown in Tables I and II.

Of the teachers from whom the data were collected, five had only normal-school training or its equivalent; three had normal-school and college training; and twenty-five had college or university training. The average percentage of failures for the group trained in normal schools was 8.8; for the normal-school and college-trained group, 12.4; and for the college-trained group, 10.1. In this instance, the teachers of least training had the lowest percentage of failures, while those with normal-school and college training had the highest. It is hardly fair to draw general conclusions, however, because the number of normal-school and college-trained teachers was very small and because the teachers with the lesser training were teaching subjects in which failures are commonly less numerous than in some of the other subjects.

TABLE II

PERCENTAGE OF FAILURES IN DIFFERENT SUBJECTS

Subject	Percentage
Science	12.1
Latin	11.5
Mathematics	10.5
History	9.5
English	9.5
French	8.5
Commercial	7.0

The teachers reporting were divided into three groups, according to experience: those with less than five years of experience, those with five to fifteen years, and those with more than fifteen years. In the first group, there were nine; in the second group, seventeen; and in the third group, seven. The percentage of failures in the classes of the teachers having less than five years of experience was 11.5; those with from five to fifteen years of experience, 10.3; and those with over fifteen years of experience, 9.3. In other words, the teachers of greatest experience had the lowest percentage of failures, while those of the least experience had the highest.

According to the data of Table III, the percentage of failures among teachers of Algebra I varied from 20 to 14; among teachers of English I, from 14 to 5; of Latin I, from 35 to 17; and of English III, from 26 to 8. All of these teachers were supposed to be teaching students of similar qualifications, since with the exception of certain English I classes there had been no segregation of students on the basis of ability. They were supposed to be teaching exactly the same course of study.

TABLE III

VARIATION IN PERCENTAGE OF FAILURES AMONG TEACHERS OF THE SAME SUBJECT

Subject	Teacher			
	1	2	3	4
Algebra I	20	18	14	......
Geometry I	22	22	16	......
English I	14	10	9	5
History I	20	14	14	......
Latin I	35	17	......	......
English III	26	8	......	......

At the end of the first quarter questionnaires were sent to all of the teachers. The following information was requested: number of failures; percentage of failures; number of pupil conferences; number of conferences with parents; number of cases in which home conditions were known; number of cases reported to Health Department; number of students regarded as better fitted for other work; number contributing to support of family; number of students whose past school records were known to the teacher; the teacher's estimate of each student's ideals; and the cause of each failure. The returns from this questionnaire are summarized in Tables IV and V.

TABLE IV

PERCENTAGE OF STUDENTS FAILING FOR SPECIFIED REASONS AS REPORTED BY ALL TEACHERS

Cause of Failure	Percentage
Lack of application	49.0
Absence	20.0
Poor foundation	16.6
Mental inability	4.7
Poor general health	4.4
Laziness	2.5
Defective vision	2.4
Defective hearing	0.4

It is significant that in the judgment of the teachers only 11.9 per cent of all of the failures were due to mental inability, poor general health, and defective vision and hearing, conditions over which the school has little control, and that 88.1 per cent of the failures were due to other causes such as lack of application, absence, laziness, and poor preparatory training, conditions over which the school has some control. If the judgment of the teachers is correct, certainly improvement should be effected through changes in conditions and practices in the school.

TABLE V

DATA CONCERNING FAILURES REPORTED BY TWELVE TEACHERS

	Teacher											
	1	2	3	4	5	6	7	8	9	10	11	12
Number of failures	17	24	9	14	20	10	29	30	31	40	35	41
Percentage of failures	4.6	6	6	12	15.6	16.7	19	22	23	25	26.1	29
Number of pupil conferences	17	24	45	11	0	20	58	60	90	40	0	82
Number of parent conferences	18	2	1	14	1	0	4	4	1	2	0	0
Number of cases in which home conditions were known	17	24	2	....	0	2	4	0	20	5	1	0
Number reported to Health Department	0	2	0	0	0	1	0	0	0	2	0	0
Number better fitted for other work	2	3	1	0	2	4	1	9	4	10	5	0
Number contributing to support of family	6	0	1	....	....	....	0	12	10	....	....	0
Number of past school records known	17	24	3	14	0	3	2	0	15	10	0	0

From the data concerning the number of pupil and parent conferences, it appears that the teachers having the highest percentages of failures worked as earnestly with the pupils as did those having the lowest percentages of failures, while, on the other hand, there is an inverse ratio between the percentage of failures and the number of parent conferences. Certain other facts reported in Table V pertain to a study of the home conditions, health, habits, and past school record of the individual student. It is evident that the teachers who gave attention to these elements of the situation accomplished better results with fewer pupil conferences than did those who merely spent more time with the pupils in a formal way.

There was some evidence that the study habits of the students were an important factor in failure, and so a study of the out-of-school habits of students was attempted. A questionnaire asking for information about the activities of the students on a certain evening was submitted to all of the students. The date selected was one upon which there were no extra activities in so far as the schools or the city were concerned. Among the questions asked were the following: "What time did you retire last night?" "Were you away from home after the evening meal?" "Do you have a good light to study by?" "Do you study in a quiet room?" The replies are summarized in Table VI. Only 1.5 per cent of the students retired at eight o'clock, while over 2 per cent were up after midnight. Sixty-two and one-tenth (62.1) per cent retired at ten o'clock or later and secured only from six to nine hours of rest, provided they arose at 7:00 A.M. The average age of pupils entering the high school is a little less than fourteen years. According to authoritative reports, boys and girls of high-school age should secure normally from nine to twelve hours of rest out of every twenty-four.

TABLE VI

FACTS CONCERNING OUT-OF-SCHOOL HABITS OF STUDENTS

Time of Retiring	Percentage of Students
8:00	1.5
8:30	3.3
9:00	12.2
9:30	20.9
10:00	21.3
10:30	20.7
11:00	10.8
11:30	5.5
12:00	1.7
After 12:00	2.1
Away from home after the evening meal	47.8
Having good light by which to study	97.0
Doing home study in a quiet room	62.0

Table VI shows also that over 47 per cent of the students were away from home following the evening meal. While some of these claimed to have done some studying, it is evident that the greatest amount of out-of-school studying was done by the 53 per cent who stayed at home. Ninety-seven per cent of those who studied during the evening reported that they had good light to study by. However, only 62 per cent were privileged to study in a quiet room, 38 per cent attempting to study in the presence of conversation or other disturbing influences which, of course, prevented concentration and efficient work.

On the whole, the data suggest that, through the co-operation of parents and teachers, it should be possible to eliminate a large percentage of the failures. Moreover, it was the experience of those teachers who invited it that they received the heartiest kind of co-operation from parents. Improvement was noted in many cases because the combined efforts of the teacher and parents had brought about better out-of-school study habits.

Education is a problem of the home and the school. Teachers should not be required to assume full responsibility for success or failure in school any more than parents. The average parent gives little attention to school matters as a rule, and so it is necessary for teachers to take the initiative in bringing about co-operative effort.

The following facts are apparent from this study of failures in the high school:

1. The percentage of failures did not depend to any great extent upon the size of the classes.

2. With few exceptions, the percentage of failures did not depend to any extent upon the subject studied.

3. The percentage of failures was not especially pronounced in any particular year of high-school work.

4. The percentage of failures appeared to be influenced by (*a*) the attitude of the students toward their work; (*b*) the out-of-school study habits of the students; (*c*) co-operation between the student and teacher and between the parent and teacher; (*d*) the personality, professional preparation, and professional attitude of the teacher.

With a view to improving the conditions noted, the following outline of procedure was put in the hands of each teacher.

- I. Determination of causes of poor work
  - 1. Study habits
    - *a*) In school
    - *b*) Out of school
  - 2. Reading ability
  - 3. Student's attitude toward work
  - 4. Health habits
  - 5. Out-of-school habits
  - 6. Mental capacity
- II. Suggestions for correction
  - 1. Student conferences
    - *a*) Improve reading ability (see supplementary suggestions)
      - (1) Rate
      - (2) Comprehension
    - *b*) Improve study habits (see supplementary suggestions)
      - (1) Clarify assignment (see supplementary suggestions)
      - (2) Show student how to study
        - (*a*) Value of concentration
        - (*b*) Discrimination in values
        - (*c*) Note-taking
    - *c*) Pupil attitude
      - (1) Discover student's dominant interest and use it if possible
      - (2) Gain student's confidence
  - 2. Parent conferences
    - *a*) Atmosphere of conference
    - *b*) Suggestions for conference
      - (1) Home study
        - (*a*) Quiet room
        - (*b*) Regular place and hour
        - (*c*) Good light
        - (*d*) Straight chair and table
      - (2) Health habits
        - (*a*) Proper amount of sleep
        - (*b*) Proper nutrition
      - (3) Physical defects
        - (*a*) Vision
        - (*b*) Hearing
      - (4) Out-of-school activities
  - 3. Capacity standards and assignments
    - *a*) Individual capacity gauged by intelligence test, grade principal's rating, or past scholastic record
    - *b*) Variable standards
    - *c*) Maximum, average, and minimum assignments

This outline was accompanied by supplementary material on how to improve reading ability, the assignment, and suggestions on teaching students how to study.

READING ABILITY

I. 1. Test student's rate and comprehension by
    - *a*) A standard test secured from superintendent's office
    - *b*) An informal test devised by teacher
  2. Technique to be employed in giving an informal test
    - *a*) Select article two or three pages in length and of simple content
    - *b*) Give student one minute in which to read silently as far as he can. Warn him that he is to answer questions on the material later
    - *c*) Call time at the end of one minute and have student mark last word read
    - *d*) Permit student to finish reading selection at his own rate
    - *e*) Have student put aside book and answer questions previously prepared by teacher on content
    - *f*) Count number of words read in one minute
    - *g*) Compare results with standards
      - (1) Rate—280 words per minute
      - (2) Comprehension—75 per cent of ideas in selection

II. Suggestions for improving reading ability
  1. Rate
    - *a*) Have student read short paragraphs under time pressure and answer questions based on content
    - *b*) Encourage student to time himself in his reading work
  2. Comprehension
    - *a*) Have student read short paragraph and answer questions based on content. Require re-reading until student gets all of the ideas and answers the questions correctly
    - *b*) Have student read selections of considerable length and write summary. Require re-reading and revision of summary
    - *c*) Have student read selections of considerable length and make outline with book open
    - *d*) Have student read long selection and answer questions based on content. Require re-reading if necessary

THE ASSIGNMENT

I. Importance of assignment
  1. "Assignment is of sufficient importance to deserve one-fifth of the recitation time."—Wolfson
  2. "Of all elements, the assignment of the new lesson is of greatest importance."—Betts

II. Teacher preparation preliminary to assignment
  1. Preparation of advance lesson
  2. Time apportionment of recitation period
    - *a*) Review—5 minutes
    - *b*) Recitation—25 minutes
    - *c*) Summary—5 minutes
    - *d*) Assignment—5 minutes

III. How to assign a lesson

1. Go over lesson with class, giving bird's-eye view, sometimes with books open calling attention to main topic
2. Analyze lesson to get main points
3. Explain unfamiliar phrases or technical terms
4. Give definite directions for written work

IV. A good assignment

1. Leaves no doubt in the student's mind as to just what he is to do for the next lesson
2. Not only tells the student what to cover but specifies how the information is to be reported
3. Clears up difficulties so that the student may go to work without loss of time
4. Includes maximum, average, and minimum assignments

STUDY HELPS FOR STUDENTS

The habits of study formed in school are of greater importance than the subjects mastered. The following suggestions, if carefully followed, will make your mind an efficient tool. Your daily aim should be to learn your lesson in less time, or to learn it better in the same length of time.

1. Form the habit of studying the lesson in any subject in the same place and at the same time each day. This will be difficult at first, but it will soon become a habit.

2. Have proper study conditions and equipment—a quiet room not too warm, good light, straight chair and table, the necessary books, tools, and materials.

3. Study independently. Do your own work and use your own judgment; ask for help only when you cannot proceed without it; develop ability to think for yourself and the will-power and self-reliance essential to succeess.

4. Arrange your tasks economically; study those subjects requiring close attention, like reading, first; and those in which concentration is easier, like written work, later.

5. Begin work promptly, without lounging or waste of time. Assume an attitude of attention; it will help you to get interested in the work at hand. When you are actually tired, exercise a moment or change to a different type of work.

6. Hold yourself to the task in hand. You cannot study one minute and then gaze out of the window a minute or think about other pupils and accomplish much.

7. Before beginning the advance work, review rapidly the previous lesson.

8. Be clear on the assignment and the form in which it is to be presented. In class, take notes when the assignment is made. When in doubt, consult the teacher.

9. In committing material to memory, learn it as a whole; go over it quickly first, then more carefully, and then again and again until you know it. In learning forms, rules, vocabularies, etc., it will help to repeat them aloud.

10. In studying material to be understood and assimilated but not memorized, first go over the whole quickly, then carefully, section by section; then, if possible, review the whole quickly.

11. Use judgment as well as memory; analyze paragraphs; select important points; note how minor ones are related to them; make a record of the important points so that you may learn systematically and review easily.

12. Use all of the material aids available—index, appendix, notes, vocabulary, maps, and illustrations, both in your textbook and in other books and periodicals.

It was also suggested that those charged with the administration of the individual school should attempt to bring about greater co-operation between parents and teachers.

The following experiment was tried in our high school:

All of the eighth-grade pupils who entered the high school in February, 1921, were given an intelligence test. The ratings of all of the pupils were secured from the principals of the schools which they attended. Using the intelligence quotients obtained from the test and the ratings obtained from the principals, the pupils were divided into two groups. The more capable pupils were included in Group A; those of less ability, in Group B. The two groups were assigned to separate sections in English work in the high school. There were three sections of Group A and two of Group B. There were also two mixed sections, that is, sections in which there were pupils with high and low intelligence scores. These were called Group C. During the year, 9.1 per cent of Group A, 28.6 per cent of Group B, and 8.8 per cent of Group C left school. It was ascertained that the principal reason for leaving was discouragement in subjects other than English. In the work in English, there was an attempt at capacity adjustment. In reading, for example, the students in Group A were assigned a larger amount of work than those of Group B, and in composition the students in Group A did twice as much work as those of Group B. After experimenting, the teachers found that it took just about twice as long to assign a lesson to Group B as to assign a lesson to Group A. In the technique of composition, Group A proceeded from two to four times as fast as Group B. For example, in teaching punctuation and the structure of the compound sentence, only one day was required for Group A, while four days were required for Group B.

At the end of the semester, a series of tests were given to these groups. The first was memory work based on the rules of punctuation. The time allotment was the same for each group. Ninety-three and four-tenths per cent of Group A and 68.4 per cent of Group B scored 100 per cent in this test, while 6.6 per cent of Group A and 31.5 per cent of Group B scored from 50 to 99 per cent or lower.

Test No. 2 was the same as Test No. 1, except that each group was given as much time as was necessary to complete the work. Group B took about twice as much time as Group A. Fifty-five and one-tenth per cent of Group A and 47.3 per cent of Group B scored 100 per cent in this test. No one in either group scored less than 70 per cent.

Test No. 3 was a test on the application of the knowledge gained from the study of the rules of punctuation. The time was the same for both sections and was sufficient to give all time enough to complete the test. Eight and six-tenths per cent of Group A and 23 per cent of Group B scored 100 per cent in this test, while no one in either group scored less than 70 per cent. The interesting feature here is that in the application of knowledge gained in preliminary study Group B had a better record than Group A. The records of these two groups of students as here described indicate that it would be unfortunate indeed were the impression to exist that these students can be classified as A and B citizens.

It is interesting to note that only 5.6 per cent of the English I pupils in 1921 failed, while 11.6 per cent of the pupils in the 1920 class in the same subject failed. In other words, the percentage of failures was reduced by exactly six points. This was in spite of the fact that the average number of students in the sections in 1921 was twenty-seven as against twenty-three in 1920.

A greater effort should be made to impress teachers with the fact that teaching school involves more than assigning lessons, holding recitations, and grading pupils. The point may be illustrated by reference to the work of two of our high-school teachers.

One feels that her responsibility does not lie entirely in drilling into the students a knowledge of the subject so that they can secure a passing grade on tests and examinations. She feels that she has the additional responsibility of securing work from the lazy and indifferent students and that it is her duty as a teacher to analyze the native ability of the individuals in her classes and to grade them according to a sliding scale based somewhat upon this ability. She secures results by working with students and with parents, by looking up school records, by analyzing students' interests through conferences with them, by determining their ability through tests, and by studying their home conditions.

The second teacher takes the attitude that the students should know what they are in school for, that they are told under what conditions they may expect to get a passing average in a given subject, and that if they do not respond according to the plan laid down for them, the responsibility is wholly theirs. She feels that there is no good reason why time should be given to them if they are not in the state of mind for work. Of course, the danger in the second case lies in the possibility of mistaking a student's attitude; of interpreting as laziness what may well be lack of ability in a given subject; of mistaking for indifference what may be defective hearing, defective vision, or poor general health; and of mistaking for lack of interest what may be due to lack of nourishment, insufficient rest, or insufficient time for preparation on the part of those who find it necessary to contribute to family support and hence work during a part of the day. These conditions cannot be accurately determined without a thorough knowledge of the pupil, his habits, and his home.

Teachers do not come out of our training schools inspired with this phase of a teacher's responsibility. The conviction is growing that training schools should exercise selection to a greater extent. Not all of those who enter training schools are fitted in temperament, in interest, and in general make-up for the profession of teaching. These people should be directed into some other line of activity early in their course by those in charge of the training courses. It is a simple matter of justice to them and to the profession.